

Never Hesitating, Always Helping

Lee Talbot

These Mechanical Technicians showed dedication and ingenuity to get the job done.

Being a Mechanical Engineering Technician was a dream profession for me, not a job. For 25 years of my 36-year Lab life, I was responsible for the mechanical technician support in the Test Program's diagnostic development and field application group. The technical and even scientific contributions of this group are well documented. But even more important and beneficial to the Lab were the dedication and personal sense of responsibility. Dozens of examples come to mind.

There was the technician, or Mech Tech as we were called, whose responsibility for one test was to oversee the installation of a vacuum line of sight. Thanks to his early and thorough preparation, he found that the nearly 4,000 nuts and bolts for the assembly would not screw together without being rethreaded, and he was able to get it done and stay on schedule. There was the Mech Tech who spotted the array of line-of-sight pipes loaded on rail cars, waiting for their 2-mile ride into B tunnel at the test site. Although not his responsibility, this Mech Tech pointed out that a number of pipes were loaded with the wrong end pointed in, which was corrected—a major savings in time and confusion.

One example tells a very personal story of lasting friendships made because of the kind of people who began at the Lab 50 years ago. The traditions they established were constantly brought into focus during the field test operations. Job title, organizational status, and degrees were set aside to get a job done on schedule.

On our 800-foot tower shot (Whitney, I believe), Physics asked our group if we could build an 8 × 8 × 8-foot argon candle on top of the device cab. The challenge wasn't mechanical or technical; it was "Who do I get to build it, get it operating dependably, and go up on top of an 800-foot tower cab at 4 a.m. on shot mornings and remove the 4 × 8-foot protective covers for the thin Mylar windows? And go back up an 800-foot tower and replace the covers if it was too windy for the shot to go off?"

I did find a crew to do it, but on the morning of the shot, my "window cover remover" partner was called away on an emergency. At midnight, I went to two barracks buildings to look for a Mech Tech who felt comfortable helping me. The person who offered to help me had a full 12 hours of critical responsibility ahead after helping me, but he didn't hesitate.

The hours were long and the work challenging, but the days were never without humor. When the Lab was using cable-tethered balloons to support the device for the event, project alignment was determined by massive arrays of prealigned diagnostics systems. Between 12 midnight and 3 a.m. on shot mornings, the Mech Techs installed optical equipment in place of the actual detectors and verified alignment on a dummy device that was below the balloon. We were to tell the balloon winch operator when it was aligned to our detectors. Remember, this was the 1950s, and there were no cell phones. The Mech Techs, once again, applied their ingenuity. They went to the military and borrowed a spool of field phone wire and mounted it on a truck. The field phones seemed to work fine. The first night, they laid the wire at the edge of the graded "roads" across the desert.

Well, our field phones worked great during testing. But at 1 a.m., they went dead. There wasn't anything left to do but laugh when we found that an Army tank had cut much of our field phone cable into 12-inch sections.



View from the top of a shot tower.

Cable Repair with a Twist

Underground testing has been a part of Laboratory operations since 1957. After the end of atmospheric testing called for by the Limited Test Ban Treaty in 1963, all testing moved underground. Much of the work at the Nevada Test Site called for miners, technicians, and engineers to descend hundreds of feet down to build the tunnels that would house nuclear devices. All work was done under stringent safety standards and with extremely careful planning.

No test epitomizes the coordination needed and the courage required on behalf of the people that went underground than the Greeley Event, when engineers had to descend 1,750 feet down in order to make repairs on a damaged cable—without removing the device.

The test, which was originally scheduled for firing in November 1966, had already been lowered to the bottom of a 4,000-foot shaft, and the hole filled with backfill for 2,200 feet, when it was revealed that a cable had been damaged.

The discovery set off a massive undertaking involving the Nuclear Test Engineering Division, Hazards Control, and Reynolds Electrical and Engineering Company (REECo, contractor for the test) to send men “down the hole” using an elevator cage.

Two 2-man 20-foot cages were built: one for the repair work, and one to be a stand-by rescue unit. REECo miners were lowered to install braces. After that, Livermore engineer Joe

Schneider and REECo engineer Dennis Simms were lowered to repair the cable, alternating shifts and taking along a miner as a safety precaution. Teams working aboveground monitored every move the miners and engineers made and constantly communicated with them.

It was not a comfortable undertaking. The cages, for one thing, were only 14-inches deep and 30 1/4-inches wide across the face. The Lab newsletter *The Magnet* reported “the cage was so crowded that the men had to stand or slump in their harness for the entire 7 to 8 hours each day that they spent in the cage. There was no room to sit. Each ride to and from the surface to the 1,750-foot working depth took 45 minutes, and the repair work took place under the most hot, dusty, and uncomfortable conditions imaginable.” Schneider became faint at the end of the first run and had to be revived by Harry Geisler for the trip upward.

Even so, the job was a success thanks to teamwork, fortitude, and a lot of missed meals. Greeley was fired on December 20, Lab and AEC officials lauded the entire crew for their efforts, and the event was heralded in several newspapers.

But it was all in a day’s work for those at the Nevada Test Site.

Thanks to Steve Massey, Joe Schneider, and Bill Lokke for providing this information.

Uh Oh . . .

Joe Hearst

Being raked by machine-gun fire from a low-flying aircraft was not in Hearst’s job description.

during the Plowshare Program, I was project scientist for the 1969 Sturtevant Event (never executed), which was scheduled to be shot in the southwest part of Area 51, an area very close to the Nevada Test Site. One day a group of us drove out to Area 51 to scout the site, traveling in two vehicles. While we were on a road in Area 51, my truck broke down,

and the other driver, ahead of us, didn’t notice and kept going. We waited for a little while (I remember munching on an ice cream bar that I had picked up at Area 12 camp). Then we heard jet planes approaching. We realized that the pilots used Area 51 for strafing practice and that some of their standard targets were abandoned vehicles. We also remembered that not too long before, a jetfighter had strafed another test site on Pahute Mesa while some security guards were stationed there.

Fortunately, the other vehicle turned around and picked us up before the planes arrived. But it was a tense 5 minutes.

Target Practice

Joe Hearst’s experience wasn’t the only time that Lab employees had to keep one eye on the sky. In 1986, a group from the Imaging and Detection Program (IDP) in Y Division was in the desert outside San Diego, launching a weather balloon as part of the Plume Radiant Observation Experiment. Everything went according to schedule, except that they didn’t realize that the area was used for aerial target practice by various law-enforcement agencies. As photographer Ken Wyman looked around, he realized that the area was strewn

with abandoned trucks and old buildings. “The next thing I know, the Top Gun guys came in and buzzed us,” said Wyman. About the same time, the helicopter responsible for Wyman’s pickup arrived, the pilot shouting over his PA system that Ken must board the helicopter without delay. Recalled Wyman, “The pilot yelled, ‘We’ve got to get out now, now, NOW!’” Ever the dedicated photographer, Ken dutifully threw his camera in first and then jumped in, standing on the skids as the helicopter took off.